Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): Column for carrying out an isotope exchange (EM) between a liquid substance (L) and a gaseous substance (G) using a catalytic reaction (EK) in which the isotope exchange between molecules of the vaporized liquid substance (V) and molecules of the gaseous substance (G) takes place through a heterogeneous catalysis, said column comprising a plurality of modules (M) which are arranged vertically one above the other and which are in each case subdivided into two regions K and A which are serially connected by a connection region (C)~~, with it being possible to carry~~ for carrying out the catalytic reaction in the region K on a first packing ~~(2), with it being possible to carry out~~ and a substance exchange (E1, E2) between a liquid and a gaseous phase which contains vapor in the region A by means of a second packing ~~(3)~~ for compensating substance concentrations, ~~with~~ a transport of the gaseous substance (G, V) which contains vapor being driven through the modules as a result of pressure gradients during the operation of the column~~; with the transport direction being changed at least once in the connection region, and indeed from~~ and the liquid substance flowing in a downward direction ~~to an upward direction, whereas the liquid substance (L) is forwarded downwardly~~ through the modules through the action of gravity alone, the regions K and A being horizontally offset from each other, and a liquid flow channel in fluid connection with region A directing the gravitational flow of the liquid substance through the modules and preventing the liquid substance from flowing through the region K.

Claim 2 (original): Column in accordance with claim 1, characterized in that the transport through the modules (M) of the gaseous substance (G, V) which contains vapor in each case being conducted upwardly through the region K, downwardly through the connection region (C) and upwardly through the region A.

Claim 3 (currently amended): Column in accordance with claim 1, characterized in that a filling of porous particles, on the surface of which a catalytically active material is applied, is used for the first packing ~~(2)~~.

Claim 4 (currently amended): Column in accordance with claim 1, characterized in that the second packing is an ordered packing ~~(3) which is in particular~~ built up of vertical layers~~, with the layers containing~~ comprising inclined channels ~~which are produced from~~ defined by corrugated material surfaces and ~~thereby form~~ forming a cross channel structure with openly crossing channels~~, is in each case used for the material exchange in the regions A~~.

Claim 5 (currently amended): Column in accordance with claim 1, characterized in that ~~in each case~~ the flow channel includes a liquid collector ~~(5) which contains~~ having a ~~siphon-like~~ siphon drain ~~(50) by means of which~~ preventing an upward passing ~~through~~ of ~~gas~~ the gaseous substance (G, V) ~~can be prevented is arranged beneath the regions A~~ past the siphon drain.

Claim 6 (currently amended): Column in accordance with claim 1, characterized in that ~~the second packing (3) is located in~~ the region A comprises a cylindrical chamber ~~(3')~~ ~~which forms the region A~~ for the second packing; in that the connection region (C) comprises a first ring space ~~(4)~~ which is arranged concentrically ~~to~~ about the region A; ~~and~~ in that the region K is formed by a second concentric ring space; and in that respective ends of the first ring space are in fluid communication with the region A and the region K ~~(2')~~.

Claim 7 (currently amended): Column in accordance with claim 1, characterized in that the region K is composed of a plurality of partial regions (K1, K2, K3, K4) which are arranged in parallel; and in that the space between ~~these~~ the partial regions forms a part of the connection region (C).

Claim 8 (currently amended): Column in accordance with claim 1, characterized in that the second packing ~~(3), the packing of the region A, is manufactured of~~ includes copper; and in that ~~the~~ a surface of the copper ~~can be easily wetted as a result of~~ is defined by a copper oxide film.

Claims 9 and 10 (canceled)

Claim 11 (new): A column for carrying out an isotope exchange between a liquid and a gas using a catalytic reaction in which the isotope exchange between molecules of the liquid in its vaporized state and molecules of the gas takes place through a heterogeneous catalysis, the column comprising a plurality of alternating first regions holding a first packing and second regions holding a second packing which are in flow communication with each other permitting the liquid in its vaporized state to flow serially through the alternating first and second regions, the first and second regions being offset from each other in a horizontal direction and respective first and second regions being vertically arranged above each other, and a flow diverter at a lower end of each second region for gravitationally flowing the liquid from one second region to the next second region and bypassing the first region so that the liquid flows only through the second regions of the column.

Claim 12 (new): A column according to claim 11 including a flow connection between a downstream end of the first region in the flow direction of the liquid in its vapor state and a downstream end of the second region in the flow direction of the liquid.

Claim 13 (new): A column for carrying out an isotope exchange between a liquid and a gas using a catalytic reaction in which the isotope exchange between molecules of the liquid in its vaporized state and the molecules of the gas takes place through a heterogeneous catalysis, the column comprising a plurality of first regions, each first region having an upstream intake and a downstream outlet located above the intake, a plurality of second regions arranged vertically above each other and holding a second packing, the first and second regions being horizontally offset relative to each other, each second region including an upstream intake for the liquid at an upper end of the second region and a downstream outlet at a lower end of the second region, a gas flow connection extending in a downwardly sloping direction from the outlet of the first region to the outlet of the second region permitting the liquid in its vapor state to flow in a generally downward direction from the outlet of the first region to the outlet of the second region, and a one-way flow passage between respective intakes and outlets of the second regions permitting the liquid to gravitationally flow from one second region to the next without flowing

through the first regions and preventing the liquid in its vaporized state from flowing from one second region to the next second region without flowing through the respective first regions.